

# PATENT ABSTRACTS OF JAPAN

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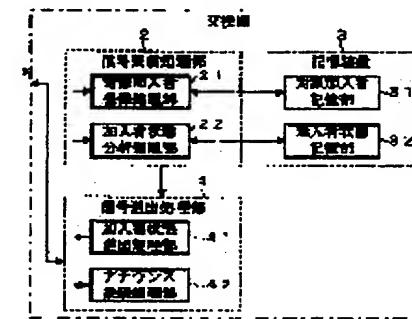
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## (54) DEVICE FOR INFORMING SUBSCRIBER STATE

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To obtain a subscriber state informing device that informs a caller subscriber of the state of a subscriber to be called before the caller subscriber makes dialing in response to a request from the caller subscriber.

**SOLUTION:** An object subscriber storage section 31 stores an object subscriber whose subscriber state is displayed for each request subscriber in advance, and a subscriber state storage section 32 stores the subscriber state for each object subscriber stored in the object subscriber storage section 31. When a transmitter side subscriber transmits a state request before dialing, a subscriber state analysis processing section 22 acquires a corresponding object subscriber from the object subscriber storage section 31 and acquires the acquired subscriber state of the object subscriber from the subscriber state storage section 32. Then a signal transmission processing section 4 informs the transmitter side subscriber of the acquired subscriber state by means of character information or voice information.



## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the notice equipment of the subscriber status which has on on the display of a telephone, is made to display a side subscriber's condition or is notified with voice before a subscriber's status-display service, especially a telephone call.

[0002]

[Description of the Prior Art] At least, at once, if it does not actually telephone, it does not know whether it is not under telephone call, or a partner is absence, or it is busy, and can appear in a telephone, to have removed the seat temporarily, when telephoning conventionally, or it can answer.

[0003]

[Problem(s) to be Solved by the Invention] Since it did not understand until the detailed status telephones whether isn't it busy with the conventional technique in whether a partner is absence, and a hand can be lifted, and whether it is [ be / it ] under telephone call, as mentioned above, there was a problem that a useless call might be performed.

[0004] This invention was made in view of the situation mentioned above, and aims at offering the notice equipment of the subscriber status which can notify a partner subscriber's condition before dispatch according to the demand from an origination-side subscriber.

[0005]

[Means for Solving the Problem] In order to solve the trouble mentioned above, in invention according to claim 1 A candidate subscriber storage means to memorize the candidate subscriber who displays the subscriber status for every demand subscriber, A subscriber status storage means memorized by the aforementioned candidate subscriber storage means to memorize the subscriber status for every candidate subscriber, The 1st acquisition means which acquires a matched-pairs elephant subscriber from the aforementioned candidate subscriber storage section according to the status demand which precedes dispatch from an origination-side subscriber, The 2nd acquisition means which acquires a candidate subscriber's subscriber condition acquired by the acquisition means of the above 1st from the aforementioned subscriber status storage means, Notice equipment of the subscriber status characterized by providing a notice means to notify the aforementioned origination-side subscriber of the subscriber status acquired by the acquisition means of the above 2nd.

[0006] Moreover, in invention according to claim 2, it is characterized by providing a candidate subscriber registration means to register the aforementioned candidate subscriber into the aforementioned candidate subscriber storage means, according to the object registration demand from a subscriber in the notice equipment according to claim 1 of the subscriber status.

[0007] Moreover, in invention according to claim 3, it is characterized by providing a status registration means to register the concerned subscriber's subscriber condition into the aforementioned subscriber status storage means, according to the status registration demand from a subscriber in the notice equipment according to claim 1 of the subscriber status.

[0008] Moreover, in invention according to claim 4, it is characterized by the aforementioned notice means being a notice means of voice to notify the aforementioned subscriber status as speech information in the notice equipment according to claim 1 of the subscriber status.

[0009] Moreover, in invention according to claim 5, it is characterized by the aforementioned notice means being a notice means of a character to notify the aforementioned subscriber status as alphabetic information in the notice equipment according to claim 1 of the subscriber status.

[0010] In this invention, while the candidate subscriber who displays the subscriber status is beforehand memorized for the candidate subscriber storage means for every demand subscriber, the subscriber status is memorized for the subscriber status storage means for every candidate subscriber memorized by the aforementioned candidate subscriber storage means. If an origination-side subscriber precedes dispatch and sends out a status demand, the 1st acquisition means will acquire a matched-pairs elephant subscriber from the aforementioned candidate subscriber storage section, and the 2nd acquisition means will acquire a candidate subscriber's subscriber condition acquired by the acquisition means of the above 1st from the aforementioned subscriber status storage means. And a notice means notifies the aforementioned origination-side subscriber of the subscriber status acquired by the acquisition means of the above 2nd. Therefore, it is enabled to wear before a telephone call and to get to know a side subscriber's condition, and is enabled to continue or cut a call to it. Therefore, after knowing a partner's convenience beforehand, since it can talk over the telephone, it is enabled to prevent a useless call.

[0011]

[Embodiments of the Invention] Hereafter, the gestalt of operation of this invention is explained using a drawing.

A. The block diagram 1 of the operation gestalt is a block diagram showing the configuration of the system wide by the operation gestalt of this invention. A system consists of the exchange which connects the circuit between the subscribers 1 who receive a service in drawing. The exchange consists of the signal reception section 2 which receives a subscriber's operation signal, storage 3 which memorizes a subscriber's condition, and the signal sending-out processing section 4 which wears to a subscriber and sends out a side subscriber's information.

[0012] The signal reception section 2 is equipped with the candidate subscriber registration processing section 21 and the subscriber phase-analysis processing section 22. The candidate subscriber registration processing section 21 analyzes the signal received from the subscriber 1, and performs required processing. The above-mentioned signal includes the signal which wears and registers a side subscriber's object, the signal which registers a subscriber's condition, and the signal which wears and demands a side subscriber's condition. When the signal which wears from a subscriber 1 and demands a side subscriber's condition is received, the subscriber phase-analysis processing section 22 is worn from storage 3, acquires a side subscriber's condition, and performs required processing. Hereafter, it explains concretely.

[0013] It wears, and in order that a side subscriber may direct [ an origination-side subscriber or ] at the exchange whether it is which signal, he uses access code AC and transmits an information. There are "\*13" used when "\*12" origination-side subscriber who uses when "\*11" origination-side subscriber who uses when it wears in access code AC and a side subscriber sets the own status to it, as shown in drawing 3 (a) wears and it registers a side subscriber wears and it demands a side subscriber's condition, and "\*14." In the access code "\*11" used when it wears and a side subscriber sets up the own status, it is possible to attach a state number XX after that and to set up the status besides transmitting only an access code and setting up the "empty" status. As shown in this drawing (b) at a state number XX, by "it is "opening at 00""", and "01", there is "others" "under a telephone call" and by "02" "absence" and "03", and there is by "busyness" and "04" "\*\*\*\*" and "05." In addition, it is also possible to set up the state number which shows status other than this.

[0014] Moreover, in an access code "\*12", it is code CC and wearing and attaching side subscriber phone number XXXXXXXX after that, and it is possible to wear to code CC and to register the above-mentioned XXXXXXXX into it as side subscriber phone number N. Moreover, in an access code "\*13", while only access code AC is transmitted, the telephone number corresponding to a code "01" wears and a status demand is carried out to a side subscriber, it is possible to attach code CC after access code AC, and for the telephone number corresponding to code CC to wear, and to carry out a status demand to a side subscriber. Furthermore, in an access code "\*14", it is wearing after that and attaching the above-mentioned XXXXXXXX as side subscriber phone number N, and it is possible to wear, and to specify and carry out the status demand of the side subscriber directly.

[0015] Storage 3 is equipped with the candidate subscriber storage section 31 and the subscriber status storage section 32. When the signal which wears from a subscriber 1 and registers a side subscriber's object is received, for every subscriber, the candidate subscriber storage section 31 was specified, is worn, and memorizes a side subscriber's telephone number. The subscriber status storage section 32 memorizes the subscriber's condition, when the signal which registers a subscriber 1 to a subscriber's condition is received. The signal sending-out processing section 4 is equipped with the subscriber status sending-out processing section 41 and the announcement connection processing section 42. The subscriber status sending-out processing section 41 was obtained by the result analyzed by the subscriber phase-analysis processing section 22, wears, and notifies a subscriber 1 of a side subscriber's condition by the message (alphabetic information). The announcement connection processing section 42 was obtained by the result analyzed by the subscriber phase-analysis processing section 22, wears, and notifies a subscriber 1 of a side subscriber's condition by announcement (voice).

[0016] B. Explain an operation of the operation gestalt, next an operation of this operation gestalt in detail. Here, drawing 2 (a) - (c) is a conceptual diagram for explaining an operation of this operation gestalt.

B-1. It is a conceptual diagram for wearing, and registration operation view of side subscriber's object 2 (a) wearing, and explaining a registration operation of a side subscriber's object. As shown in drawing 2 (a), the demand subscriber A1 sends out the registration signal 51 for wearing "subscriber a" and registering as a side subscriber's object. For example, as shown in drawing 4, using access code AC for status registration etc., it wears and a side subscriber's telephone number

is registered into the exchange (step Sa1). Specifically, the registration signal 51 is sent out in a format like [AC for status investigation]+ [the subscriber phone number for status investigation] (for example, \*12\*9914724#). In addition, "9914724" wears among the above "\*12\*9914724#", and it is a side subscriber's telephone number. In addition, the above "#" is an end-of-data notation. The signal reception section 2 shown in drawing 1 will add "subscriber a (wearing side subscriber phone number)" to the list of the objects of the demand subscriber A1 in the candidate subscriber storage section 31, if the above-mentioned registration signal 51 is received.

[0017] B-2. A registration operation, next the drawing 2 (b) of a subscriber's condition are a conceptual diagram for explaining a registration operation of a subscriber's condition. As shown in drawing 2 (b), subscriber a which is going to register the status sends out the status registration signal 62, in order to register the status of "absence." For example, as shown in drawing 5 (a), the own status is notified to the exchange using access code AC for status registration etc. (step Sb1). Specifically, the status registration signal 62 is sent out in a format like [status setting AC]+ [a state number] (for example, \*11\*02#). In addition, "02 (absence)" is a state number among the above "\*11\*02#."

[0018] The signal reception section 2 shown in drawing 1 will set up the status (for example, "absence") of subscriber a in the subscriber status storage section 32, if the above-mentioned status registration signal 62 (for example, "absence" status registration signal 62) is received. Similarly, in order that subscriber b may register the status of "busyness", when the status registration signal 62 is delivered, the status of subscriber b in the subscriber status storage section 32 is made into "busyness." If access code AC and the state number which were received are discriminated and it specifically recognizes that it is registration of the status as shown in drawing 5 (b), a state number will be registered as a corresponding subscriber's condition (step Sc1).

[0019] B-3. A status demand operation of an arrival-of-the-mail subscriber, next the drawing 2 (c) are conceptual diagrams for explaining an operation of a status demand of an arrival-of-the-mail subscriber. As shown in drawing 2 (c), the demand subscriber A1 sends out the status demand signal 71 to an object registered subscriber. For example, as shown in drawing 6 (a), a partner's condition is required of the exchange using access code AC for a status demand etc. (step Sd1). Specifically, the status demand signal 71 is sent out in a format like [status demand AC] (for example, \*13#, \*13\*CC#). Moreover, in wearing and specifying a side subscriber directly, it sends out the status demand signal 71 which wore and specified side subscriber c from the demand subscriber A1. For example, the status demand signal 71 is sent out using access code AC for status registration etc. in a format like [status demand AC]+ [the subscriber phone number for status investigation] (for example, \*14\*9914724#). In addition, "9914724" wears among the above "\*14\*9914724#", and it is a side subscriber's telephone number.

[0020] a reception of the above-mentioned status demand signal 71 of the signal reception section 2 shown in drawing 1 stores it in main memory, as shown in drawing 6 (b) -- it wears, the side subscriber status is investigated, a message is delivered to a \*\* side subscriber, it is made to display on a display, or it wears with voice and the near status is notified (step Se1) Specifically, the signal reception section 2 will search the list of the objects of the demand subscriber A1 in the candidate subscriber storage section 31 first, if the above-mentioned status demand signal 71 is received. In the case of an access code "\*13#", the status demand signal 71 searches the list of the objects of the subscriber of the telephone number corresponding to a code "01." Moreover, when access code AC is "\*13\*CC", the list of the objects of the subscriber of the telephone number corresponding to code CC is searched. For example, when the list of the demand subscriber's A1 objects is searched, the information on subscriber a and subscriber b is acquired. Next, the information on subscriber a and subscriber b in the subscriber status storage section 32 is searched by the subscriber phase-analysis processing section 22. Here, subscriber a acquires the status say that "absence" subscriber b is "busyness."

[0021] Moreover, when access code AC is "\*14\*XXXXXX#", the information on the specified telephone number (for example, 9914724) is searched. For example, when the information on subscriber c in the subscriber status storage section 32 is searched, subscriber c acquires the status say that it is an "opening."

[0022] The status that it finally acquired among the signal sending-out processing section 4 shown in drawing 1 is passed, and by the subscriber status sending-out processing section 41, the exchange notifies the demand subscriber A1 of a suitable announcement (voice) according to the status that returned the subscriber the status signal 73 or it acquired by the announcement connection processing section 42, as shown in drawing 6 (b).

[0023] C. other operation gestalt which carried out operation gestalt \*\*\*\* -- an origination-side subscriber -- or it wears and the side subscriber transmitted the registration signal 51, the status registration signal 62, and the status demand signal 71 using access code AC Here, in the case of

an analog subscriber, a subscriber explains access code AC and the example of the specification technique about ISDN subscriber's case, and an ETSI-ISDN subscriber's case.

[0024] Drawing 7 is a conceptual diagram for explaining access code AC in the case of an analog subscriber, and the example of the specification technique. In drawing, it is possible to attach a state number XX after that and to set up the status in the access code "\*11" used when it wears and a side subscriber sets up the own status. Moreover, it is wearing and attaching side subscriber phone number N after that, in an access code "\*12", and while it is possible to wear and to register side subscriber phone number N, it is code CC and wearing and attaching side subscriber phone number N, and it is possible to wear to code CC and to register side subscriber phone number N into it.

[0025] Moreover, in an access code "\*13", it is possible to wear, and for the telephone number corresponding to code CC to wear [ wear, while the thing which is registered and to which a side subscriber transmits and does the status demand only of access code AC only in one is possible, when / whose a side subscriber is a plurality / being registered, attach code CC after access code AC, and ], and to carry out a status demand to a side subscriber. Furthermore, when it wears and the side subscriber is not registered in an access code "\*14", it is wearing after that and attaching side subscriber phone number N, and it is possible to wear, and to specify and carry out the status demand of the side subscriber directly. Moreover, it will wear and a notice of a side subscriber's condition will be offered only by announcement.

[0026] Drawing 8 is a conceptual diagram for explaining access code AC in the case of ISDN subscriber, and the example of the specification technique. In drawing, it is possible to attach a state number XX after that and to set up the status in the access code "\*11" used when it wears and a side subscriber sets up the own status. Moreover, it is wearing and attaching side subscriber phone number N after that, in an access code "\*12", and while it is possible to wear and to register side subscriber phone number N, it is code CC and wearing and attaching side subscriber phone number N, and it is possible to wear to code CC and to register side subscriber phone number N into it.

[0027] Moreover, in an access code "\*13", it is possible to wear, and for the telephone number corresponding to code CC to wear [ wear, while the thing which is registered and to which a side subscriber transmits and does the status demand only of access code AC only in one is possible, when / whose a side subscriber is a plurality / being registered, attach code CC after access code AC, and ], and to carry out a status demand to a side subscriber. Furthermore, when it wears and the side subscriber is not registered in an access code "\*14", it is wearing after that and attaching side subscriber phone number N, and it is possible to wear, and to specify and carry out the status demand of the side subscriber directly. Moreover, it will provide by wearing, wearing a notice of a side subscriber's condition on a terminal display, and displaying a side information.

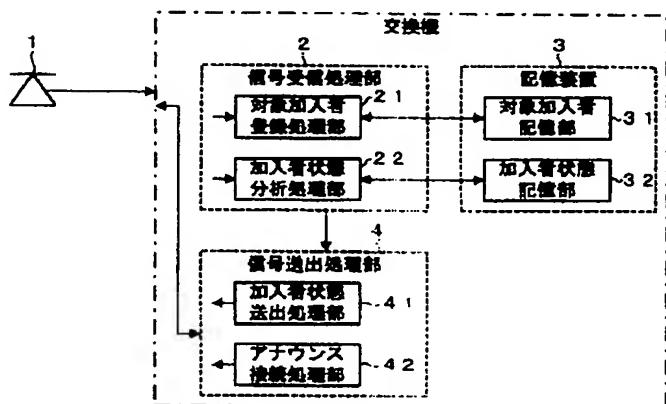
[0028] Drawing 9 is a conceptual diagram for explaining access code AC in the case of an ETSI (Europe telecommunication standardization device)-ISDN subscriber, and the example of the specification technique. In drawing, when it wears and a side subscriber sets up the own status, it is possible to set up the status by setting up a state number in FAC message. Moreover, when carrying out registration for status investigation, it is possible to wear and to register side subscriber phone number N by setting up code CC and the telephone number, into FAC message, at code CC. Moreover, in a status demand, it is possible for the telephone number corresponding to code CC to wear, and to carry out a status demand to a side subscriber by setting up code CC and the telephone number in FAC message. Moreover, it will provide by wearing, wearing a notice of a side subscriber's condition on a terminal display, and displaying a side information.

[0029] According to the operation gestalt mentioned above, an addresser can wear before a telephone call, can know a side subscriber's condition, and can continue or cut a call to it. After knowing a partner's convenience beforehand, since it can talk over the telephone, a useless call can be prevented. The subscriber who wears and becomes a side can set up various status ("absence", "busyness", "\*\*\*\*", etc.). In under telephone call, it is automatically set up "under a telephone call."

[0030]

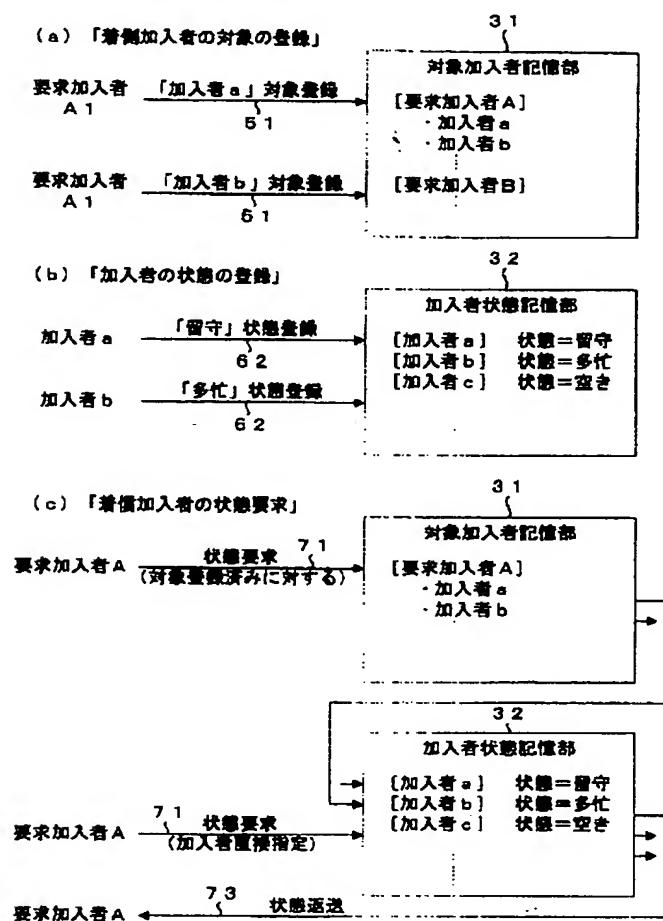
[Effect of the Invention] The advantage that it can telephone after taking a partner's convenience into consideration according to this invention since a partner subscriber's condition was notified before dispatch according to the demand from an origination-side subscriber as explained above is acquired. Moreover, it wears and the advantage that the circuit hold to an office can be reduced is acquired.

## Drawing selection [Drawing 1]



[Translation done.]

## Drawing selection [Drawing 2]



[Translation done.]

Drawing selection **Drawing 3** 

## (a) アクセスコード

*11: 状態設定	*11# : 「空き」状態設定 *11#XX# : 状態番号=XX設定
*12: 状態調査対象登録	*12#CC#XXXXXX# : CODE=CCに、N=XXXXXXを登録
*13: 状態要求	*13# : CODE=01の電話番号に対して要求 *13#CC# : CODE=CCの電話番号に対して要求
*14: 状態要求(電番指定)	*14#XXXXXX# : 指定電番(N=XXXXXX)に対して要求

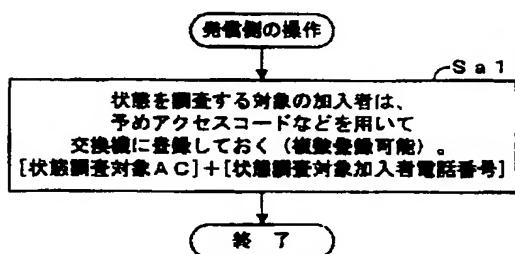
## (b) 状態番号

00 : 空き
01 : 通話中
02 : 留守
03 : 多忙
04 : 障害
05 : その他

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[Translation done.]

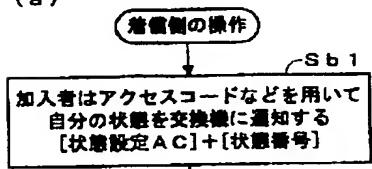
## Drawing selection [Drawing 4]



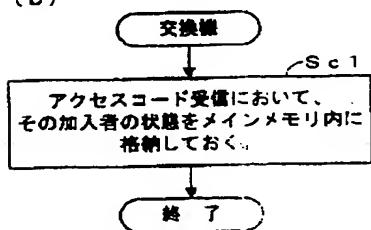
[Translation done.]

## Drawing selection [Drawing 5]

(a)



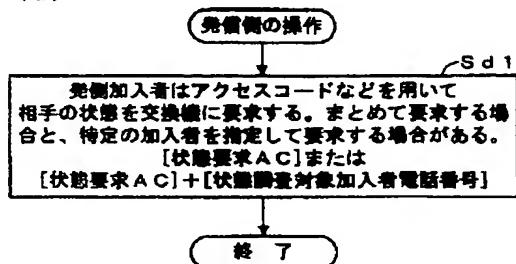
(b)



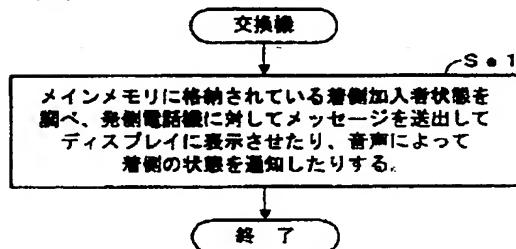
[Translation done.]

## Drawing selection [Drawing 6]

(a)



(b)



[Translation done.]

## Drawing selection [Drawing 7]

アナログ加入者の場合

状態設定	*11#02#	状態番号=02を設定
状態調査対象登録	*12#9914724#	N=9914724を登録
	*12#01#9914724#	CODE=01に、N=9914724を登録
状態要求	*13#	登録が1つのみの場合、CODEの指定は不要
	*13#01#	登録が複数ある場合で、CODE=01の電番に対して要求
	*14#9915543#	登録していない場合で、指定番号(N=9915543)に対して要求
着側情報	-	アナウンスのみで提供

[Translation done.]

Drawing selection [Drawing 8 

## ISDN加入者の場合

状態設定	*11#02#	状態番号=02を設定
状態調査対象登録	*12#9914724#	N=9914724を登録
	*12#01#9914724#	CODE=01に、N=9914724を登録
状態要求	*13#	登録が1つのみの場合、CODEの指定は不要
	*13#01#	登録が複数ある場合で、CODE=01の電話に対して要求
	*14#9915543#	登録していない場合で、指定番号(0#9915543)に対して要求
着側情報	-	端末ディスプレイに着側情報を表示

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[Translation done.]

Drawing selection **Drawing 9** 

ETSI - ISDN加入者の場合

状態設定	FACメッセージ内に状態番号を設定
状態調査対象登録	FACメッセージ内にCODE No. および電番を設定
状態要求	FACメッセージ内に、CODE No. あるいは電番を設定
着側情報	端末ディスプレイに着側情報を表示

[Translation done.]